

Rec'd PCT 11 JAN 2005

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property  
Organization  
International Bureau



(43) International Publication Date  
22 January 2004 (22.01.2004)

PCT

(10) International Publication Number  
WO 2004/008185 A2

- (51) International Patent Classification<sup>7</sup>: G02B (74) Agents: LUZZATTO, Kfir et al.; Luzzatto & Luzzatto, P.O. Box 5352, 84152 Beersheva (IL).
- (21) International Application Number: PCT/IL2003/000558 (81) Designated States (*national*): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GI, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.
- (22) International Filing Date: 3 July 2003 (03.07.2003) (84) Designated States (*regional*): ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).
- (25) Filing Language: English
- (26) Publication Language: English
- (30) Priority Data: 150746 15 July 2002 (15.07.2002) IL
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- Published:  
— without international search report and to be republished upon receipt of that report
- For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.*

(54) Title: OPTICAL LENS PROVIDING OMNI-DIRECTIONAL COVERAGE AND ILLUMINATION

(57) Abstract: The invention presents a wide-angle imaging assembly which comprises a main lens produced from an aspheric optical block. The aspheric optical block comprises a vertical axis of symmetry; a transparent upper surface, at least part of which is capable of reflecting rays that impinge upon it from the interior of the optical block; a transparent perimeter surface; and a transparent lower surface. The optical block is fabricated from material selected to enable optical transmittance of a specific spectral range. Light rays in the specific spectral range originating in a first scene, having a 360 degrees panoramic perimeter, are refracted by the transparent perimeter surface, enter the optical block, are then reflected by the upper surface towards the transparent lower surface, where they are then refracted by the transparent lower surface, and exit through it.

WO 2004/008185 A2

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